

**North Carolina  
Department of Agriculture  
& Consumer Services**

**Agronomic Division  
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**Additional information  
can be obtained  
from an  
NCDA&CS regional agronomist  
or the local  
Cooperative Extension office.**



**Revised August 1998**

**NOTE 2: Tobacco  
Plant  
Beds**



**Lime**

The amount of lime recommended on the soil test report should raise the soil pH to an optimum level for plant growth. For tobacco seedlings, the optimum pH range is between 5.8 and 6.2. A lower soil pH can be detrimental due to low levels of calcium and magnesium coupled with high soil acidity. Above pH 6.2, manganese availability decreases dramatically. Therefore, follow lime recommendations as closely as possible to stay within the desired pH range.

The lime recommendation is given in units of lb/1000 ft<sup>2</sup> (= lb/M). To convert this rate to lb/100 yd<sup>2</sup>, multiply by 0.9: for example, 100 yd<sup>2</sup> = 900 ft<sup>2</sup>. Apply lime as early as possible to allow enough time for it to neutralize the soil acidity before planting. For best results, use high quality agricultural grade lime and incorporate it thoroughly into the top 6 to 8 inches of soil.

There are two types of lime used for agricultural purposes: calcitic and dolomitic. Calcitic limestone contains calcium carbonate (CaCO<sub>3</sub>) but little or no magnesium. Dolomitic limestone contains both calcium and magnesium carbonates [CaMg(CO<sub>3</sub>)<sub>2</sub>] and has at least 120 lb Mg/ton.

Dolomitic lime is the best used on sandy coastal plain soils, which tend to be low in magnesium. Calcitic lime is fine for use on Piedmont and mountain soils, which generally contain sufficient amounts of magnesium.

All soil samples are routinely tested for magnesium. When the test results show that

magnesium is needed, a \$ appears in the *Mg* column of the *Recommendations* section. If a \$ appears on your report but no lime is recommended, use a 12-6-6 plant bed fertilizer containing 1.0% Mg, or broadcast 5 lb of magnesium sulfate (Epsom salts) per 100 yd<sup>2</sup> and incorporate it 2 to 3 inches into the soil.

**Fertilizer Application Rates**

For plant beds covered with perforated plastic, apply no more than 50 lb 12-6-6 per 100 yd<sup>2</sup> (2400 lb/acre) and incorporate it into the top 2 to 3 inches of soil. Apply no more than 75 lb of 12-6-6 per 100 yd<sup>2</sup> (3600 lb/acre) on beds covered with nylon, Reemay or cotton. Higher fertilizer rates can result in poor germination and salt damage to the roots of young seedlings.

On sites where the soil test phosphorus index (P-I) is less than 25, an additional application of 8 to 10 lb

of triple superphosphate (0-46-0) per 100 yd<sup>2</sup> may be beneficial. Apply this additional phosphorus along with the 12-6-6 and incorporate 2 to 3 inches into the soil.

**Supplemental Fertilizer**

Additional nitrogen (N), potassium (K) or sulfur (S) may be needed on sandy soils exposed to excess rain or irrigation. Visual diagnosis of deficiencies can be risky because the symptoms for some nutrients, such as nitrogen and sulfur, are very similar. Therefore, the need for supplemental treatments is best diagnosed by soil and plant tissue tests.

Collect soil and plant samples as soon as any abnormal plant symptoms are observed. If plant analysis and/or soil testing show a need for additional nutrients, use materials shown in Table 1. In most cases, 0.5 lb/100 yd<sup>2</sup> of the

nutrient element in need will correct the problem. For example, if nitrogen is low, a top dressing of 3 to 5 lb of nitrate of soda (16-0-0) per 100 yd<sup>2</sup> will be sufficient.

**Micronutrients (Mn, Cu and Zn)**

Take a soil test prior to plant bed preparation to find out which micronutrients, if any, are needed. Generally, micronutrients do not present a problem in tobacco plant beds. However, if tests indicate that they are low, a \$ will appear in the *Recommendations* section for the micronutrient in question.

The \$ *Note* that comes with your soil test report offers suggestions on application rates. If plant growth problems occur and micronutrients are suspected, collect a plant tissue sample along with a soil sample and send them to the Agronomic Division for testing.

**Table 1. Sample application rates of some supplemental fertilizers**

Materials	Analysis	lb/100 yd <sup>2</sup>	Content (lb)			
			N	K <sub>2</sub> O	Mg	S
Sodium nitrate	16-0-0	3.2	0.51	-	-	-
Nitrate of Na-K	15-0-14	3.4	0.51	0.48	-	-
Calcium nitrate	15.5-0-0	3.23	0.5	-	-	-
Potassium sulfate	0-0-50; 17.6% S	1.0	-	0.50	-	0.18
Magnesium sulfate	14% S; 10% Mg	3.8	-	-	0.38	0.53
Sulfate of potash-magnesium	0-0-22 22% S; 11% Mg	2.3	-	0.51	0.25	0.51